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|  | Division of Environmental Health and Communicable Disease Prevention |              |
|   | Section: 4.0 Diseases and Conditions                                 | Updated 7/03 |
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## Blastomycosis

### **Overview** <sup>(1,2)</sup>

For a complete description of blastomycosis, refer to the following texts:

Control of Communicable Diseases Manual (CCDM).

Red Book, Report of the Committee on Infectious Diseases.

### **Case Definition** <sup>(1,2)</sup>

#### ***Clinical description***

An acute or chronic illness caused by infection with the fungus *Blastomyces dermatitidis* that primarily affects the lungs and skin. Acute infection may not be recognized, but is generally characterized by sudden onset of fever, cough and pneumonia. Some individuals experience extrapulmonary infection, particularly with spread to skin, and less often to bone, prostate, or epididymis. Rarely affects the meninges. Weight loss, weakness and low-grade fever may also be present.

#### ***Laboratory criteria for diagnosis***

Isolation of *Blastomyces dermatitidis* from a clinical specimen or

Visualization of broad-based budding yeast in an appropriate clinical specimen

Note: Serologic tests (complement fixation, immunodiffusion, and enzyme-linked immunosorbent assay) are available, however, sensitivity and specificity vary and should not be used to diagnose or rule out blastomycosis. <sup>(3)</sup>

#### ***Case classification***


*Confirmed:* A clinically compatible case that is laboratory confirmed.

#### ***Comment***

The Centers for Disease Control and Prevention does not include a case definition for blastomycosis for public health surveillance, however, this definition is used by other states and for outbreak investigations.

### **Information Needed for Investigation**

**Verify the diagnosis.** Determine what laboratory tests were conducted and what were the results.

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### **Case/Contact Follow Up and Control Measures**

Determine if household members or other close contacts are, or have been ill, by contacting the health care provider, patient, or family member.

#### **Control Measures**

See the Blastomycosis section of the Control of Communicable Diseases Manual (CCDM).

See the Blastomycosis section of the Red Book.

### **Laboratory Procedures** <sup>(4)</sup>

#### **Specimens:**

The Missouri State Tuberculosis Laboratory tests specimens from all body sites for *Blastomyces dermatitidis* by culture. Contact the Regional Communicable Disease Coordinator before submitting samples to the Missouri State Tuberculosis Laboratory.


The regular sputum kit provided by Missouri State Tuberculosis Laboratory is adequate for all types of fungal specimen collection.

Swabs should be broken off into a centrifuge tube and a small amount of sterile saline added to keep the swab moist.

### **Reporting Requirements**

Blastomycosis is a Category II disease and shall be reported to the local health authority or to the Missouri Department of Health and Senior Services (DHSS) within 3 days of first knowledge or suspicion by telephone, facsimile or other rapid communication.

1. For confirmed cases, complete a "Disease Case Report" (CD-1).
2. For a confirmed case complete a "Blastomycosis Investigation Report"
3. Send completed forms to the Regional Office.
4. Entry of appropriate information into the MOHSIS database will satisfy item 1 of this section.
5. All outbreaks or "suspected" outbreaks must be reported as soon as possible (by phone, fax or e-mail) to the Regional Communicable Disease Coordinator. This can be accomplished by completing the Missouri Outbreak Surveillance Report (CD-51).
6. Within 90 days from the conclusion of an outbreak, submit the final outbreak report to the Regional Communicable Disease Coordinator.

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## **References**

1. Chin, James, ed. "Blastomycosis" Control of Communicable Diseases Manual. 17<sup>th</sup> ed. Washington, DC: American Public Health Association, 2000: 68-70.
2. American Academy of Pediatrics. "Blastomycosis." In: Pickering, LK, ed. 2000 Red Book: Report of the Committee on Infectious Diseases. 25<sup>th</sup> ed. Elk Grove Village, IL: American Academy of Pediatrics; 2000: 189-190.
3. Chapman, Stanley W. "Blastomycosis", Principles and Practice of Infectious Diseases 5<sup>th</sup> ed. Eds. Gerald L. Mandell, John E. Bennett, and Raphael Dolin. New York: Churchill Livingstone, Inc., 2000: 2733-2746.
4. Department of Health, <Department Organization> State Public Health Laboratory, Tuberculosis, Services Offered Missouri State Tuberculosis Laboratory Services <[www.dhss.state.mo.us](http://www.dhss.state.mo.us)> (06/02/03)

## **Other Sources of Information**

1. A Laboratory-Based Surveillance of Human Blastomycosis in Wisconsin Between 1973 and 1982. Klein, Bruce S., Davis, Jeffrey P. American Journal of Epidemiology. Vol 122, No. 5; 1985: 897-903.
2. Centers for Diseases Control and Prevention. Blastomycosis – Wisconsin, 1986-1995. MMWR July 19, 1996, Vol 45 No 28:601-603

## **Web Sites**

Centers for Disease Control and Prevention – "Blastomycosis," December 2000  
<[http://www.cdc.gov/ncidod/dbmd/diseaseinfo/blastomycosis\\_t.htm](http://www.cdc.gov/ncidod/dbmd/diseaseinfo/blastomycosis_t.htm)> (30 May 2002)

# **BLASTOMYCOSIS**

## **FACT SHEET**

### **What is blastomycosis?**

Blastomycosis is a disease caused by a fungus that grows in moist soils, particularly wooded areas along waterways and in undisturbed places like under porches or sheds.

### **Who gets blastomycosis?**

Studies have shown that the risk for disease may be greater among middle-aged men, 30-59 years of age. Also at greater risk are those with outdoor exposure during work such as farmers and forestry workers or during recreational activities in wooded areas and along waterways. Exposure to soil has also been associated with risk of illness.

### **How do you get blastomycosis?**

You get blastomycosis by breathing dust that contains the spores. The disease also occurs in dogs, cats and other animals. It is not transmitted from animals to people or from person-to-person.

### **How long after exposure to the fungus do symptoms start?**

It takes from 3 weeks to 3 months but symptoms will usually start in 45 days.

### **What are the symptoms of blastomycosis?**

The disease may present with sudden onset of fever or cough and can resolve after 1-3 weeks of illness. But, more commonly, the onset is slow and the disease becomes a chronic form and spreads from the lungs, causing skin lesions usually on the face and fingers. It may also cause weight loss, weakness and low-grade fever. If untreated it can result in death.

### **How is blastomycosis diagnosed?**

A physician should be seen for testing and diagnosis. Early diagnosis and treatment are important to prevent serious illness and/or death.

### **Can blastomycosis be treated?**

Yes, the disease can be treated with medication prescribed by your doctor.

### **How can blastomycosis be prevented?**

Prevention measures are unknown. However, activities which bring individuals closer to rotting wood and exposure with the soil such as hunting, fishing, or playing in soil near water may be associated with a greater risk of developing blastomycosis.

If symptoms occur, see a doctor immediately. If you change doctors during the illness, be sure you tell the new physician what your symptoms were then and what medication you were given.

**Missouri Department of Health and Senior Services**  
**Section for Communicable Disease Prevention**  
**Phone: (573) 751-6113 or (866) 628-9891**



STATE OF MISSOURI  
DEPARTMENT OF HEALTH  
**BLASTOMYCOSIS INVESTIGATION REPORT**

|                |                       |                      |      |
|----------------|-----------------------|----------------------|------|
| PATIENT'S NAME | DOB                   | SEX                  | RACE |
| ADDRESS        | DURATION OF RESIDENCY |                      |      |
| CITY           | COUNTY                | TELEPHONE<br>(     ) |      |
| PHYSICIAN      |                       |                      |      |
| ADDRESS        |                       | TELEPHONE<br>(     ) |      |
| DATE OF ONSET  | DATE OF DIAGNOSIS     |                      |      |

**SYMPTOMS**

|                                       |  |                                     |  |                                     |                                  |
|---------------------------------------|--|-------------------------------------|--|-------------------------------------|----------------------------------|
| <input type="checkbox"/> SKIN LESIONS | <input type="checkbox"/> CHEST PAIN          | <input type="checkbox"/> COUGH      | <input type="checkbox"/> FEVER             | <input type="checkbox"/> HEMOPTYSIS | <input type="checkbox"/> MALAISE |
| <input type="checkbox"/> WEIGHT LOSS  | <input type="checkbox"/> SHORTNESS OF BREATH | <input type="checkbox"/> JOINT PAIN | <input type="checkbox"/> MUSCLE ACHES/PAIN |                                     |                                  |
| <input type="checkbox"/> NIGHT SWEATS | <input type="checkbox"/> WEAKNESS            | <input type="checkbox"/> CHILLS     |  |                                     |                                  |
| <input type="checkbox"/> OTHER: _____ |  |                                     |  |                                     |                                  |

**LABORATORY**

☐ CULTURE      OTHER: \_\_\_\_\_

| SPECIMEN | DATE COLLECTED | RESULTS | LAB |
|----------|----------------|---------|-----|
|          |                |         |     |
|          |                |         |     |

HAVE YOU EVER BEEN DIAGNOSED WITH:

|  |  |
|--|--|
| <input type="checkbox"/> DIABETES                  | <input type="checkbox"/> ARTHRITIS     |
| <input type="checkbox"/> ASTHMA                    | <input type="checkbox"/> TUBERCULOSIS  |
| <input type="checkbox"/> CHRONIC PULMONARY DISEASE | <input type="checkbox"/> HEART DISEASE |
| <input type="checkbox"/> ANEMIA                    | <input type="checkbox"/> CANCER        |
| <input type="checkbox"/> PNEUMONIA                 |  |

OCCUPATION

HOBBIES

DO YOU SMOKE?

☐ YES    ☐ NO    IF YES, HOW MUCH? \_\_\_\_\_

HAVE YOU PARTICIPATED IN ANY OF THE FOLLOWING ACTIVITIES WITHIN 6 MONTHS OF ONSET?

|  |   |
|--|---|
| <input type="checkbox"/> FISHING                             | LOCATION: _____                                   |
| <input type="checkbox"/> HUNTING                             | LOCATION: _____                                   |
| <input type="checkbox"/> CONSTRUCTION                        | <input type="checkbox"/> LANDSCAPING              |
| <input type="checkbox"/> EARTH DIGGING/EXCAVATION            | <input type="checkbox"/> CUTTING/CHOPPING WOOD    |
| <input type="checkbox"/> GARDENING/TENDING HOUSE PLANTS      | <input type="checkbox"/> TREE STUMPS/ROTTING WOOD |
| <input type="checkbox"/> SWIMMING                            | WHERE? _____                                      |
| <input type="checkbox"/> FARMING (CULTIVATING OR HARVESTING) |   |

|  |                  |  |
|--|------------------|--|
| WHAT IS THE MAJOR SOURCE OF DUST EXPOSURE?   |                  |  |
| DO YOU KNOW OF OTHER CASES OF BLASTOMYCOSIS?<br><input type="checkbox"/> YES <input type="checkbox"/> NO |                  |  |
| WHAT IS YOUR ASSOCIATION WITH THAT CASE?   |                  |  |
| DO YOU HAVE ANY CONTACT WITH ANIMALS?<br><input type="checkbox"/> YES <input type="checkbox"/> NO        | TYPE OF ANIMALS? | HOW OFTEN?<br><input type="checkbox"/> DAILY <input type="checkbox"/> WEEKLY <input type="checkbox"/> OCCASIONALLY |
| OTHER INFORMATION:   |                  |  |
| DATE   |                  |  |
| INVESTIGATED BY  |                  |  |